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## (54) Grout preparations

(57) A grout preparation for use in setting ceramic tiles or for renovating existing grout lines has incorporated therein an odorous substance, such as a perfume. The grout may be of ready-mixed type based on an emulsion of a synthetic polymer, e.g. polyvinyl acetate, or of a type to be mixed with water before use, e.g. a grout based on cement and sand. The preparation may be either a paste or of paint-like consistency for coating.

GB 2085463 A

## SPECIFICATION

## Grout preparations

## 5 DESCRIPTION

This invention concerns grout preparations for use in setting ceramic tiles or for renovating existing grout lines, either as ready mixed compositions or as compositions to be mixed 10 with water prior to use.

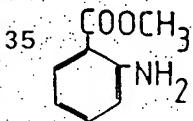
Tiles are often fixed to walls of rooms in which an easily cleaned surface is desired for the purpose of hygiene. Such rooms include kitchens and bathrooms where a pleasantly 15 smelling atmosphere is also often desired.

The object of this invention is to provide a grout preparation capable of imparting a pleasant odour to a room in which it has been used.

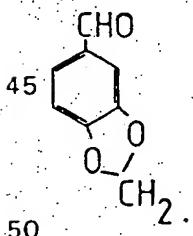
20 Accordingly this invention provides a grout preparation having incorporated therein an odoriferous substance.

The odoriferous substance may be a perfume, for example, for imparting an odour like 25 that of pine, rose, cologne, or may even be a blend of perfume oils. Clearly, the odoriferous substance will be chosen according to the desired odour.

Particularly suitable as odoriferous substances are certain aromatic compounds, such 30 as esters and aldehydes. Examples of these are methyl anthranilate



40 and piperonal



50 Suitable specific examples of perfumes are those known as Cologne A105257 and Starlite A105258.

55 The odoriferous substance may be incorporated in the grout preparations in any suitable way and may be a liquid (oil) or solid (powder) which is readily dispersed in the grout preparation. Alternatively, the odoriferous substance 60 may be in the form of microencapsulated particles which are dispersed in the grout preparation, thus ensuring gradual release of the odoriferous substance to atmosphere.

Microencapsulated particles are prepared by 65 a three phase component system consisting of

perfume, carrier solution and additive material (a gel type for example) which coagulates on changes of pH allowing the particles to be formed by spray or freeze drying.

70 The amount of odoriferous substance incorporated in the grout preparations will be fairly small usually up to about 2% by weight.

For a ready mixed grout or grout renovator preparation according to the invention, the 75 essential ingredients apart from the odoriferous substance, will be an aqueous emulsion of a synthetic polymer and a filler.

These ready mixed preparations may also include a silicone oil, a pigment and other 80 minor additives customary in grout preparations, for example thickeners, fungicides and dispersing agents.

The reason for including a silicone oil is to provide a grout preparation which when applied over a glazed tile surface can readily be removed therefrom after drying merely by rubbing with a dry cloth.

The silicone oil will usually be incorporated 90 in the polymer emulsion prior to compounding with the odoriferous substance, fillers, pigment and other additives. The silicone oil may be emulsified by the addition of various surfactant systems and these emulsions are freely miscible with polymer emulsions providing the 95 surfactant systems of the polymer emulsion and the silicone oil emulsion are not incompatible. In some cases a silicone oil can be dispersed directly into the polymer emulsion.

In the polymer-silicone oil dispersions 100 portions of silicone oils of between 10% and 40% by weight of the polymer solids have proved satisfactory. Suitable silicone oils are dimethyl silicone or dimethyl polysiloxane.

The polymer emulsions particularly suitable 105 for the ready mixed grout preparations are emulsions of vinyl and acrylic polymers or copolymers.

Grout renovators containing an odoriferous 110 substance are particularly advantageous, in that when the original grout no longer imparts a pleasant odour, this can be restored by renovating the grout lines.

The ready mixed preparations in accordance 115 with the present invention can, as stated, be used either as a coating composition for application to existing grout lines to repair and/or improve the appearance of the latter or as a ready-mixed grouting composition. The difference between the preparations will largely lie 120 one of consistency, coating compositions being of a paint-like consistency and the grouting compositions being of a thick-paste consistency. This will reflect a lower polymer content and higher filler content of the grouting 125 composition in relation to a coating composition.

For a grout preparation which is to be mixed with water before use, the essential ingredients, apart from the odoriferous substance, will be cement, filler, such as sand,

2 substances to improve adhesion, such as polyvinyl alcohol and polyvinyl acetate, and a substance to improve workability and limit water absorption by the tiles and substrate.

5 such as cellulose ether. Optional ingredients include pigments.

The percentage ratio of cement to sand may be from 70:30 but will usually be about 50:50.

10 The grout preparations of this invention, as has already been stated, may include pigment. The pigment may be an inorganic oxide or an organic pigment and may be included at the manufacturing stage or may be added 15 later by the user of the preparation. The amount of pigment to be added in either case will usually be from 0.1 to 7.5% by weight of the preparation.

In the main, grout preparations according to 20 the invention whether ready mixed or otherwise are prepared by mixing of the ingredients except as stated above for silicone oils.

This invention will be further described by means of the following Examples:

25

*Example 1*

A ready-mixed grout was prepared by mixing the following ingredients in the amounts stated:

30 % by weight

Pigment dispersant solution (Vinamul 6975, vinyl acetate copolymer emulsion)	9.94
DC 772 Water repellent (sodium methyl silconate)	1.42
Ethylene glycol	3.55
Ground China Clay	1.42
40 Polymer (VINAMUL 8120 polyvinyl acetate emulsion) silicone oil dispersion	14.22
Filler and pigment (Dolomite and titanium dioxide)	67.49
45 Perfume (Cologne A105257)	1.96

*Example 2*

A ready-mixed grout renovator was prepared by mixing the following ingredients in the amounts stated:

50 % by weight

Water	26.99
55 Pigment dispersant solution (VINAPOL 1640, potassium polymethacrylate)	2.95
Ground limestone	31.90
Titanium dioxide	5.89
60 Polymer (VINAMUL 8120) silicone oil dispersion	29.46
Hydroxymethyl cellulose	0.30
Fungicide (THION 60, thiadiazine)	0.05
DC 772 water repellent	0.99
65 Perfume (STARLITE A105258)	1.47

*Example 3*

A cement-based grout was prepared by mixing the following ingredients in the amounts stated:

	% by weight
White cement	42.84
Sand	54.53
75 Cellulose	0.19
Perfume (COLOGNE A105257)	2.44

It will be appreciated that similar grouts and 80 renovators to those of Examples 1 to 3 may be prepared wherein the perfume is in a microencapsulated form.

**CLAIMS**

85 1. A grout preparation having incorporated therein an odoriferous substance.

2. A preparation as claimed in claim 1 wherein the odoriferous substance is a perfume or a blend of perfumes.

90 3. A preparation as claimed in claim 1 or 2 wherein the odoriferous substance is incorporated in the form of a liquid (oil) or solid (powder) or in microencapsulated form.

4. A preparation as claimed in claim 1, 2 or 3 wherein the odoriferous substance is an aromatic compound.

95 5. A preparation as claimed in claim 4 wherein the aromatic compound is an ester or an aldehyde.

100 6. A preparation as claimed in any one of claims 1 to 5 wherein the odoriferous substance is methyl anthranilate or piperonal.

7. A preparation as claimed in any one of claims 1 to 6 wherein the amount of odoriferous substance incorporated is upto 2% by weight.

105 8. A ready mixed grout or grout renovator preparation as claimed in any one of claims 1 to 7 comprising an aqueous emulsion of a synthetic polymer and a filler.

9. A preparation as claimed in claim 8 further comprising a silicone oil, a pigment and optionally one or more of thickeners, fungicides and dispersing agents.

110 10. A preparation as claimed in claim 9 wherein pigment is present in an amount of from 0.1 to 7.5% by weight.

11. A preparation as claimed in claim 9 or 10 wherein the silicone oil is emulsified by 115 the addition of a surfactant system.

12. A preparation as claimed in claim 9, 10 or 11 wherein the silicone oil is present in an amount of between 10 and 40% by weight of the polymer solids.

125 13. A preparation as claimed in any one of claims 9 to 12 in which the silicone oil is dimethyl silicone or dimethyl polysiloxane.

14. A preparation as claimed in any one of claims 8 to 13 wherein the aqueous polymer emulsion is of vinyl or acrylic polymers

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or copolymers.

15. A grout preparation as claimed in any one of claims 1 to 7 which is to mixed with water before use comprising cement, filler, substances to improve adhesion, a substance to improve workability and limit water absorption by tiles and substrate, and optionally pigment.

16. A preparation as claimed in claim 15 wherein the filler is sand.

17. A preparation as claimed in claim 15 or 16 wherein the substances to improve adhesion are polyvinyl alcohol and polyvinyl acetate.

15. 18. A preparation as claimed in claim 15, 16 or 17 wherein the pigment is present in an amount of from 0.1 to 7.5% by weight.

19. A preparation as claimed in any one of claims 15 to 18 wherein the substance to improve workability and limit water absorption is cellulose ether.

20. A preparation as claimed in any one of claims 16 to 19 wherein the percentage ratio of cement to sand is from 70:30 to

25. 30:70.

21. A grout preparation substantially as hereinbefore described with reference to any one of the Examples.

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